

ADDITIONS TO LICHEN DISTRIBUTION IN NORTH AMERICA

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Some of the material which has been accumulating in my herbarium for many years has not been published. By far the greater portion of this is mainly of interest to those for whom the determining was done, but somewhat more than 200 species are worth recording as additions to distribution.

Many of the species recorded in this paper were collected by the writer, on the islands of Puget Sound, during a sojourn of six weeks at the Seaside Station of the University of Washington, in the summer of 1906, with headquarters at Friday Harbor, on San Juan Island. On the return trip, a week was spent at Glacier, British Columbia, and Laggan, Alberta. At these two places high elevations were reached, and much interesting material was secured, part of which is recorded in this paper. Little has been recorded definitely for any of these places in way of lichen distribution, though the areas are covered in a general way, for many of the species, in Tuckerman's Synopsis.

For several years the writer determined lichens collected by L. H. Pammel in the western mountains. Colton Russell sent specimens from Missouri and other western states many years ago. T. C. Frye sent a considerable number from the Olympic Mountains in Washington, and E. T. Harper has added to the list by collections from several areas. Several other botanists and zoölogists have added somewhat to the list published herein.

The list follows, given for distribution, and divested of all other non-essential data. Where no collector is named, the collecting was done by the writer.

Acarospora cervina (Wahl.) Koerb.

Waldron Island in Puget Sound, 1906, rocks.

Acarospora chlorophana (Wahl.) Ach.

Socorro County, New Mexico, Coll. C. J. Herrick, 1895, and near Glacier, British Columbia, 1906, rocks.

Acarospora fuscata (Schröd.) Arn.

Islands of Puget Sound, 1906, rocks.

Acarospora glaucocarpa (Wahl.) Ach.

San Juan Island in Puget Sound, 1906, limestone.

Acarospora glebosa Koerb.

Boone County, Iowa, 1903, sandstone.

Acolium tympanellum (Ach.) DeNot.

Islands of Puget Sound and near Glacier, British Columbia, 1906, bark and decorticate wood. Thallus often poorly developed.

Amphiloma lanuginosum (Hoffm.) Nyl.

San Juan Island in Puget Sound, 1906, and Madison County, Kentucky, 1908, various shaded substrata, in moist places.

Arthonia impolita (Ehrh.) Borr.

San Juan Island in Puget Sound, 1906, red cedar wood.

Arthopyrenia gemmata (Ach.) Mass.

Stewart's Island in Puget Sound, 1906, maple bark.

Arthopyrenia glabrata (Ach.)

San Juan Island in Puget Sound, 1906, bark.

Arthopyrenia quinquesepitata (Nyl.) Fink.

Boone County, Iowa, 1903, bark.

Bacidia akompsa (Tuck.) Fink.

Islands of Puget Sound, also Longmire Springs, Washington, Coll. E. T. Harper, 1906, bark.

Bacidia dryina (Ach.)

Islands of Puget Sound, 1906, cedar bark.

Bacidia schweinitzii (Tuck.) Fink.

Missouri and Arkansas, Coll. Colton Russell, 1899, bark.

Biatorella clavus (Lam. & DC.) Th. Fr.

Colorado mountains, Coll. L. H. Pammel, 1904, rocks.

Biatorella geophana (Nyl.)

Islands of Puget Sound, 1906, moist clay.

Biatorella pruinosa (J. E. Smith) Fink.

Cole County, Missouri, Coll. Colton Russell, 1898, shaded rocks.

Biatorella simplex (Dav.) Br. & Rostr.

Iron County, Missouri; Coll. Colton Russell, 1898, shaded rocks.

Biatorina bahusiensis (Blomb.)

Near Laggan, Alberta, Coll. Carolyn Crosby, 1901, rocks.

Biatorina chalybeia (Borr.) Mudd.

Near Minneapolis, Minnesota, 1896, limestone.

Biatorina cyrtella (Ach.) Nyl.

Near Duluth, Minnesota, 1898, poplar bark.

Biatorina laureri (Hepp.)

Islands of Puget Sound, 1906, bark.

Biatorina prasina (Fr.) Fink.

Shushan, New York, Coll. Frank Dobbin, 1907, bark.

Biatorina tricolor (With.) Fink.

Islands of Puget Sound, 1906, bark and wood. Inconspicuous and seldom collected.

Bilimbia hypnophila (Ach.) Th. Fr.

San Juan Island in Puget Sound, 1906, mosses over rocks.

Buellia colludens (Nyl.) Tuck.

Madison County, Missouri, Coll. Colton Russell, 1906, exposed sandstone.

Buellia leptocline (Flot.) Mass.

Islands of Puget Sound, 1906, rocks. Little known in North America.

Buellia papillata (Sommerf.) Tuck.

Near Laggan, Alberta, 1906, mosses at 9,000 feet.

Buellia stellulata (Tayl.) Br. & Rostr.

San Juan Island in Puget Sound, 1906, rocks.

Buellia turgescens (Nyl.) Tuck.

San Juan Island in Puget Sound, 1906, old boards.

Calicium curtum Borr. & Turn.

San Juan Island in Puget Sound, 1906, dead wood.

Calicium hyperellum Ach.

Near Glacier, British Columbia, 1906, bark of conifers. Not often collected in North America.

Cetraria aculeata (Schreb.) Fr.

Islands of Puget Sound, 1906, soil over rocks. Widely distributed over exposed rocks of this region.

Cetraria arctica (Hook.) Tuck.

Near Glacier, British Columbia, 1906, soil over rocks at 9,000 feet.

Cetraria chlorophylla (Humb.) Wain.

Islands of Puget Sound, 1906, dead bark and wood.

Cetraria cucullata (Bell) Ach.

Near Glacier, British Columbia, and Laggan, Alberta, 1906, soil among rocks.

Cetraria fendleri Tuck.

Socorro County, New Mexico, Coll. C. J. Herrick, 1898, twigs. The type locality is in New Mexico, where collected by Fendler, in 1856.

Cetraria glauca (L.) Ach.

San Juan Island in Puget Sound, near Glacier, British Columbia, 1906, and from National Park, Montana, Coll. M. E. Jones, 1910, trees.

Cetraria juniperina (L.) Ach.

San Juan Island in Puget Sound, 1906, Cascade Mountains, Washington, Coll. T. C. Frye, 1907, and Utah, Coll. L. H. Pammel, 1907, bark and dead wood.

Cetraria madreporiformis (Ach.) Muell.

Near Glacier, British Columbia, and Laggan, Alberta, 1906, soil at high elevations.

Cetraria nivalis (L.) Ach.

Near Laggan, Alberta, 1906, at 8,500 feet. Also Yahulat Island, Alaska, Coll. Trevor Kincaid, 1897, and Albany County, Wyoming, Coll. Aven Nelson, 1901, soil.

Cetraria orbatum (Nyl.).

Islands of Puget Sound, 1906, trees. A little-known lichen described from California as *Platysma orbatum* Nyl.

Cetraria platyphylla Tuck.

Islands of Puget Sound, 1906, trees. Common throughout this area.

Cetraria stenophylla (Tuck.).

Islands of Puget Sound, 1906, trees. Widely distributed in this area.

Cetraria tenuifolia (Retz.) Howe.

At the Palisades on the north shore of Lake Superior in Minnesota, 1897, Isle Royale in Lake Superior, 1902, and near Glacier, British Columbia, 1906, soil.

Cetraria terrestris (Schaer.).

Near Glacier, British Columbia, and Laggan, Alberta, 1906, soil.

Chaenotheca brunneola (Ach.) Muell.

Islands of Puget Sound, 1906, cedar bark. Not well known in North America.

Cladonia apolepta (Ach.)

Islands of Puget Sound, 1906, and Washington County, New York, Coll. S. H. Burnham, 1907, old wood in moist places.

Cladonia bacillaris (Del.) Nyl.

San Juan Island in Puget Sound, 1906, logs.

Cladonia bellidiflora (Ach.) Schaer.

Islands of Puget Sound, and near Glacier, British Columbia, 1906, soil over rocks.

Cladonia carneola Fr.

Islands of Puget Sound, and near Glacier, British Columbia, 1906, soil.

Cladonia cenotea (Ach.) Schaer.

Near Glacier, British Columbia, and Laggan, Alberta, 1906, soil.

Cladonia chlorophaea (Gaud.) Spreng.

Essex County, New York, Coll. Carolyn W. Harris, 1899, and Islands of Puget Sound, 1906, soil.

Cladonia coccifera (L.) Willd.

Islands of Puget Sound, and near Glacier, British Columbia, 1906, soil.

Cladonia cornuta (L.) Schaer.

Near Laggan, Alberta, 1906, soil.

Cladonia crispata (Ach.) Schaer.

San Juan Island in Puget Sound, 1906, soil over rocks.

Cladonia deformis (L.) Hoffm.

Near Glacier, British Columbia, and Laggan, Alberta, 1906, soil and old wood.

Cladonia degenerans (Floerke) Spreng.

San Juan Island in Puget Sound, 1906, soil.

Cladonia denticollis Hoffm.

San Juan Island in Puget Sound, 1906, Cape Breton Island, Coll. G. E. Nichols, 1909, New Brunswick, Coll. G. B. Kaiser, 1910, soil and old wood.

Cladonia digitata (Ach.) Nyl.

San Juan Island in Puget Sound, and near Laggan, Alberta, 1906, soil.

Cladonia ecmocyna (Ach.) Nyl.

Islands of Puget Sound, near Glacier, British Columbia, 1906, Lo Lo Hot Springs, Montana, Coll. M. J. Elrod, and in the Olympic Mountains, Washington, Coll. T. C. Frye, 1907, soil.

Cladonia gracilescens (Floerke) Wain.

Islands of Puget Sound, near Glacier, British Columbia, and near Laggan, Alberta, 1906, soil.

Cladonia gracilis (L.) Willd.

Islands of Puget Sound, 1906, soil over rocks.

Cladonia leporina Fr.

Hot Springs, Arkansas, Coll. Colton Russell, 1899, rocks.

Cladonia macilenta Hoffm.

San Juan Island in Puget Sound, 1906, old board fence.

Cladonia palamaea (Ach.).

San Juan Island in Puget Sound, 1906, soil over rocks.

Cladonia pityrea (Floerke) Wain.

Fayette County, Iowa, 1896, old wood.

Cladonia pyxidata (L.) Hoffm.

St. Louis County, Missouri, Coll. Colton Russell, 1897, and Lincoln County, New Mexico, Coll. S. F. Earle, 1910, soil.

Cladonia squamosa (Scop.) Hoffm.

Islands of Puget Sound, 1906, old wood.

Cladonia subcariosa Nyl.

Tacoma Park, D. C., Coll. Mabel E. Williams, and Lookout Mountain, Tennessee, Coll. W. W. Calkins, rocks. Distributed as *Cladonia symphy-carpa* Fr. in Lichenes Boreali-Americani no. 178, and in W. W. Calkins' North American Lichens, nos. 85 and 94.

Cladonia subulata (L.).

Islands of Puget Sound, 1906, old logs.

Cladonia subsquamosa (Nyl.) Wain.

Islands of Puget Sound, 1906, Chehalis County, Washington, Coll. J. C. Tillman, 1907, and Mt. Hood, Oregon, Coll. T. C. Frye, 1907, soil and old wood.

Cladonia sylvatica (L.) Rabenh.

Islands of Puget Sound, 1906, soil over rocks.

Collema plicatile Ach.

Islands of Puget Sound, 1906, shaded limestone.

Coniocybe furfuracea (L.) Koerb.

Islands of Puget Sound, and Laggan, Alberta, 1906, bark.

Coniocybe pallida (Pers.) Fr.

Waldron Island in Puget Sound, 1906, oak bark.

Dermatocarpon arboreum (Fr.) Fink.

St. Louis County, Missouri, Coll. Colton Russell, 1897, bark.

Dermatocarpon fluviatile DC.

Brown Island in Puget Sound, and near Glacier, British Columbia, 1906, Wet rocks.

Dermatocarpon hepaticum (Ach.) Th. Fr.

Wayne County, Missouri, Coll. Colton Russell, 1898, soil.

Everina furfuracea (L.) Mann.

Rincon Mountains, Arizona, Coll. J. C. Blumer, 1909, dead pines.

Everina vulpina (L.) Ach.

Waldron Island in Puget Sound, and near Laggan, Alberta, 1906, bark.

Gyrophora angulata (Tuck.) Herre.

Grand Marais, Minnesota, 1901, Islands of Puget Sound, and near Glacier, British Columbia, 1906, and Olympic Mountains, Washington, Coll. T. C. Frye, 1907, rocks.

Gyrophora cylindrica (L.) Ach.

Near Glacier, British Columbia, at 9,500 feet, and Laggan, Alberta, at 5,400 feet, 1906, rocks.

Gyrophora deusta (L.) Borr. & Turn.

In several localities on islands in The Lake of the Woods and along the northern boundary of Minnesota, 1899 to 1902, rocks. The plants are sterile and were not determined until recently. Tuckerman included this species with *Gyrophora proboscidea* (L.) Ach.

Gyrophora hyperborea Ach.

Top of Mt. Constitution in Puget Sound, near Glacier, British Columbia, and near Laggan, Alberta, 1906, rocks at 2,000 to 8,500 feet.

Gyrophora phaea (Tuck.) Herre.

Stewart Island in Puget Sound, 1906, rocks.

Gyrophora polyphylla (L.) Fr.

Islands of Puget Sound, 1906, rocks.

Gyrophora rugifera (Nyl.) Th. Fr.

Beaver Creek, Colorado, 11,900 feet, Coll. L. H. Pammel, 1895, Olympic Mountains, Washington, 8,500 feet, Coll. T. C. Frye, 1907, and San Francisco Peaks, Arizona, Coll. H. C. Cowles, rocks.

Gyrophora vellea (L.) Ach.

Golden Colorado, Coll. L. H. Pammel, 1895, Lo Lo Hot Springs, Montana, Coll. M. J. Elrod, 1897, and Clear Water, Idaho, Coll. L. H. Pammel, 190, rocks.

Heppia despreauxii (Mont.) Tuck.

Jefferson County, Missouri, Coll. Colton Russell, 1898, and Colorado City, Colorado, Coll. H. L. Shantz, 1904, soil.

Icmadophila aeruginosa (Scop.) Mass.

Islands of Puget Sound, and near Glacier, British Columbia, and Laggan, Alberta, 1906, old logs and stumps.

Lecanora albescens (Hoffm.) Th. Fr.

San Juan Island in Puget Sound, 1906, old boards. Previously unknown in North America, unless the same as *Lecanora hageni* (Ach.) Koerb.

Lecanora atra (Huds.) Ach.

Iron County, Missouri, Coll. Colton Russell, 1900, rocks.

Lecanora boligera (Norm.) Hedl.

Near Glacier, British Columbia, Coll. Carolyn Crosby, 1901, bark. Not previously reported from North America.

Lecanora cinerea (L.) Summerf.

Islands of Puget Sound, near Glacier, British Columbia, and near Laggan, Alberta, 1906, rocks.

Lecanora cinereorufescens (Ach.) Fr.

Near Glacier, British Columbia, 1906, rocks at 6,000 feet. Little known in North America.

Lecanora diffracta (Ach.)

Islands of Puget Sound, 1906, rocks.

Lecanora frustulosa (Dicks.) Ach.

Brown Island in Puget Sound, 1906, rocks.

Lecanora heteromorpha Ach.

Near Glacier, British Columbia, 1906, rocks.

Lecanora hypnorum (Wulf.).

Near Glacier, British Columbia, 1906, mosses.

Lecanora Pacifica Tuck.

San Juan Island in Puget Sound, 1906, wood and bark.

Lecanora pallescens (L.) Schaer.

Missoula, Montana, Coll. M. J. Elrod, 1899, San Juan Island in Puget Sound, 1906, and Olympic Mountains, Washington, and Mt. Hood, Oregon, Coll. T. C. Frye, 1907, bark and mosses.

Lecanora pallida (Schreb.) Schaer.

San Juan Island in Puget Sound, 1906, bark.

Lecanora rabenhorstii (Hepp).

Fayette County, Iowa, 1897, limestone.

Lecanora rubina (Lam. & DC.) Ach.

Iron County, Missouri, Coll. Colton Russell, 1898, rocks.

Lecanora sordida (Pers.) Th. Fr.

Islands of Puget Sound, and near Glacier, British Columbia, 1906, rocks.

Lecanora subattingens (Wain.).

San Juan Island in Puget Sound, 1906, board fences. Not previously reported from North America.

Lecanora tartarea (L.) Ach.

Iron County, Missouri, Colton Russell, 1900, and Islands of Puget Sound, 1906, bark and rocks.

Lecanora ventosa (L.) Ach.

Near Glacier, British Columbia, and Laggan, Alberta, 1906, and Olympic Mountains, Washington, Coll. T. C. Frye, 1907, rocks.

Lecanora verrucosa (Ach.) Laur.

Near Glacier, British Columbia, 1906, soil and mosses.

Lecidea atrobrunnea (DC.) Schaer.

Beaver Creek and LaMotte Peak, Colorado, Coll. L. H. Pammel, 1896 and 1900, Pikes Peak, Colorado, Coll. E. T. Harper, and near Glacier, British Columbia, 1906, rocks.

Lecidea caeruleonigricans (Lightf.) Schaer.

Isla Ryale, Michigan, 1902, rocks.

Lecidea confluens (Ach.) Nyl.

Near Glacier, British Columbia, 1906, rocks.

Lecidea cinnabarina Sommerf.

Islands of Puget Sound, 1906, boards. Known from only a few North American areas.

Lecidea fossarum Duf.

Sulphur Springs, Colorado, Coll. E. Bether, 1913, soil. An inconspicuous lichen, the distribution of which is not well known.

Lecidea fuscoatrata Nyl.

Islands of Puget Sound, 1906, rocks. Previously known only from the type locality in California.

Lecidea fusciorubens Nyl.

San Juan Island in Puget Sound, 1906, rocks. Not previously reported from North America.

Lecidea goniophila (Floerke) Koerb.

West Lake Fork, Utah, Coll. L. H. Pammel, 1900, and Waldron Island in Puget Sound, 1906, rocks.

Lecidea granulosa (Hoffm.) Ach.

Near Glacier, British Columbia, 1906, soil.

Lecidea latypea Ach.

Islands of Puget Sound, 1906, rocks.

Lecidea lutescens (Hellb.) Stiz.

Plummers Island, Maryland, 1907, rocks. Not previously reported from North America.

Lecidea morio Schaer.

Utah, Coll. L. H. Pammel, 1907, rocks.

Lecidea parvifolia Pers.

Butler County, Missouri, Coll. Colton Russell, 1898, bark.

Lecidea platycarpa Ach.

Waldron Island in Puget Sound, near Glacier, British Columbia, and near Laggan, Alberta, 1906, rocks.

Lecidea pringlei Tuck.

Near Laggan, Alberta, 1906, rocks at 9,000 feet.

Lecidea querneae (Dicks.) Ach.

Brown Island in Puget Sound, 1906, dead wood.

Leptogium albociliatum Desf.

Stewart Island in Puget Sound, 1906, soil.

Leptogium lecerum (Retz.) S. F. Gray.

Waldron Island in Puget Sound, 1906, bark.

Leptogium muscicola (Sw.) Fr.

Islands of Puget Sound, 1906, mosses.

Leptogium myochroum (Schrad.) Tuck.

Islands of Puget Sound, 1906, rocks and bark.

Leptogium palmatum (Huds.) Mont.

Islands of Puget Sound, 1906, mossy rocks.

Lopadium fuscoluteum (Dicks.) Mudd.

Longmire Springs, Washington, Coll. E. T. Harper, 1906, bark.

Lopadium phyllocharis (Mont.).

Gainesville, Florida, Coll. F. M. O'Byrne, 1912, leaves.

Megalospora sanguinaria (L.) Koerb.

Islands of Puget Sound, and near Glacier, British Columbia, 1906, bark.

Micarea denigrata (Fr.) Hellb.

San Juan Island in Puget Sound, 1906, bark.

Nephroma arctica (L.) Fr.

Near Glacier, British Columbia, and Laggan, Alberta, 1906, soil.

Nephroma laevigata Ach.

Near Glacier, British Columbia, 1906, rocks.

Nephroma lusitanica Schaer.

Islands of Puget Sound, 1906, rocks.

Nesolechia punctum Mass.

Fayette County, Iowa, 1902, on *Cladonia mitrula* Tuck.

Pannaria brunnea (Sw.) Mass.

Islands of Puget Sound, and near Glacier, British Columbia, 1906, soil and mosses.

Pannaria hypnorum (Hoffm.) Koerb.

St. Paul's Island, Alaska, Coll. Trevor Kincaid, 1897, and Paradise Valley, Washington, Coll. E. T. Harper, 1906, mosses and soil.

Pannaria lepidiota (Sommerf.) Th. Fr.

Mt. Hesperus, Southern Colorado, 11,000 feet, Coll. Baker, Earle, and Tracy, 1898, Islands of Puget Sound, 1906, and Longmire Springs, Washington, Coll. E. T. Harper, 1906, rocks and bark.

Pannaria leucosticta Tuck.

Madison and Iron counties, Missouri, Coll. Colton Russell, 1898, rocks.

Pannaria microphylla (Sw.) Mass.

Iron and Waine counties, Missouri, Coll. Colton Russell, 1898, rocks.

Parmelia albescens (Schaer.).

Near Glacier, British Columbia, and Laggan, Alberta, 1906, decorticate wood.

Parmelia alpicola Th. Fr.

Near Laggan, Alberta, 1906, rocks at 9,000 feet.

Parmelia ambigua (Wulf.) Ach.

Islands of Puget Sound, near Glacier, British Columbia, and near Laggan, Alberta, 1906, decorticate wood.

Parmelia centrifuga (L.) Ach.

Near Glacier, British Columbia, 1906, rocks.

Parmelia lanata (L.) Wallr.

Uintah Mountains, Utah, at 12,000 feet, Coll. L. H. Pammel, 1901, and near Laggan, Alberta, 1906, rocks at 9,200 feet.

Parmelia molliuscula Ach.

Laramie County, Colorado, Coll. Mrs. C. F. Baker, 1895, Laramie, Wyoming, Coll. Aven Nelson, 1895, South Dakota, Coll. W. P. Carr, 1902, and North Dakota, Coll. L. R. Waldron, 1904, soil.

Parmelia omphalodes (L.) Ach.

Islands of Puget Sound, 1906, rocks.

Parmelia physodes (L.) Ach.

Islands of Puget Sound, near Glacier, British Columbia, and near Laggan, Alberta, 1906, bark. Forms of this variable species are common in these areas.

Parmelia stygia (L.) Ach.

St. George Island, Alaska, Coll. Trevor Kincaid, 1897, Wasp Island in Puget Sound, and near Laggan, Alberta, 1906, rocks.

Peltigera venosa (L.) Hoffm.

Near Laggan, Alberta, 1906, soil.

Pertusaria multipuncta (Turn.) Nyl.

Islands of Puget Sound, 1906, bark.

Phycia aipolia (Ach.) Nyl.

Brown Island in Puget Sound, 1906, rocks.

Physcia comosa (Eschw.) Nyl.

Near Little Rock, Arkansas, Coll. Colton Russell, 1899, bark.

Physcia hispida (Schreb.) Tuck.

San Juan Island in Puget Sound, 1906, old fences.

Physcia pulverulenta (Schreb.) Nyl.

Waldron Island in Puget Sound, and near Glacier, British Columbia, 1906, rocks.

Physcia teretiuscula (Nyl.).

Gunflint, Minnesota, 1897, Hot Springs, Arkansas, Coll. Colton Russell, 1899, and Iron County, Missouri, by the same collector, 1900, rocks.

Little known in North America, being usually confused with *Physcia caesia* (Hoffm.) Nyl.

Piloporus aciculâris (Ach.) Th. Fr.

San Juan Island in Puget Sound, 1906, rocks.

Piloporus hallii (Tuck.).

Longmire Springs, Washington, Coll. E. T. Harper, 1906, and Olympic Mountains, Washington, Coll. T. C. Frye, 1907, rocks.

Placodium aurantiacum (Lightf.) Naeg. & Hepp.

Islands of Puget Sound, 1906, rocks and wood.

Placodium cinnabarinum (Ach.) Anzi.

Islands of Puget Sound, 1906, exposed rocks.

Placodium citrinum (Hoffm.) Leight.

Jefferson County, Missouri, Coll. Colton Russell, 1899, shaded limestone.

Placodium ferrugineum (Huds.) Hepp.

Brown Island in Puget Sound, 1906, bark.

Placodium galactophyllum Tuck.

Washington County, Missouri, Coll. Colton Russell, 1900, exposed limestone.

Placodium jungermanniae (Wahl.) Tuck.

Near Laggan, Alberta, at 7,000 to 9,000 feet, 1906, among mosses.

Placodium lobulatum (Sommerf.) Fink.

Waldron Island in Puget Sound, 1906, rocks.

Placodium murorum (Hoffm.) Ach.

Waldron Island in Puget Sound, 1906, rocks.

Placodium sideritis (Tuck.).

Waldron Island in Puget Sound, 1906, rocks.

Placodium sinapispermum (Auct.) Hepp.

Near Laggan, Alberta, 1906, rocks. Little known in North America.

Placodium ulmorum Fink.

Near LaCrosse, Wisconsin, Coll. L. H. Pammel, 1892, and Rooks County, Kansas, Coll. E. Bartholemew, 1893, bark.

Placodium vitellinum (Hoffm.) Hepp.

Waldron Island in Puget Sound, and near Laggan, Alberta, 1906, soil and rocks.

Psora crenata (Tayl.).

Laramie County, Colorado, at 7,000 feet, Coll. Mrs. C. F. Baker, 1895, soil.

Psora globifera (Ach.).

Isle Royale, Michigan, 1902, and near Glacier, British Columbia, 1906, rocks.

Psora icterica (Mont.) Fink.

Lincoln County, New Mexico, Comm. W. R. Maxon, 1902, and Gillispie County, Texas, Coll. G. Jermy, without date, soil.

Psora lurida (Sw.) Koerb.

Isle Royale, Michigan, Coll. E. T. Harper, 1904, soil.

Pyrenula cerasi (Schröd.) Hepp.

Plummers Island, Maryland, 1907, bark.

Rhizocarpon alboatrum (Hoffm.) Th. Fr.

Waldron Island in Puget Sound, 1906, bark.

Rhizocarpon alpicolum (Wahl.).

St. Paul's Island, Alaska, Coll. Trevor Kincaid, 1897, and near Laggan, Alberta, 1906, rocks.

Rhizocarpon badioatrum (Floerke) Th. Fr.

Near Glacier, British Columbia, 1906, rocks.

Rhizocarpon geographicum (L.) Lam. & DC.

Islands of Puget Sound, near Glacier, British Columbia, and near Laggan, Alberta, 1906, rocks.

Rhizocarpon oidaleum (Tuck.).

Islands of Puget Sound, 1906, and National Park, Montana, Coll. M. E. Jones, 1910, bark, wood, and rocks.

Rhizocarpon petraeum (Wulf.) Koerb.

Islands of Puget Sound, and near Glacier, British Columbia, 1906, rocks.

Rinodina aterrima (Krempelh.) Anzi.

Near Laggan, Alberta, at 9,000 feet, 1906, rocks. A little-known plant.

Rinodina biatorina Koerb.

Plummers Island, Maryland, Coll. W. R. Maxon, 1902, and Bruce Fink, 1907, rocks.

Rinodina constans (Nyl.) Tuck.

Near Shushan, New York, Coll. Frank Dobbin, 1907, trees.

Rinodina hallii Tuck.

Islands of Puget Sound, 1906, bark.

Solorina crocea (L.) Ach.

Montana, Coll. M. E. Jones, 1902, and near Glacier, British Columbia, 1906, soil.

Speerschneidera euplaca (Tuck.) Trev.

Missouri, Coll. Colton Russell, 1900, rocks.

Sphaerophorus globiferus (L.) DC.

Islands of Puget Sound, 1906, bark.

Staurothele diffractella (Nyl.) Tuck.

Washington County, Missouri, Coll. Colton Russell, 1900, limestone.

Stereocaulon alpinum Laur.

Islands of Puget Sound, 1906, rocks.

Stereocaulon tomentosum Fr.

Islands of Puget Sound, 1906, rocks.

Sticta anthrapsis Ach.

Islands of Puget Sound, 1906, bark and rocks.

Sticta crocata (L.) Ach.

Waldron Island in Puget Sound, 1906, mossy rocks.

Sticta limbata (Turn.) Ach.

San Juan Island in Puget Sound, 1906, rocks near shore. A little-known plant in North America.

Sticta oregana Tuck.

Longmire Springs, Washington, Coll. E. T. Harper, 1906, bark.

Sticta scrobiculata (Scop.) Ach.

Waldron Island in Puget Sound, 1906, exposed sandstone.

Synechoblastus pycnocarpus (Nyl.) Fink.

Iron County, Missouri, Coll. Colton Russell, 1900, bark.

Teloschistes lychneus (Ach.) Tuck.

San Juan Island in Puget Sound, 1906, rocks and wood.

Teloschistes polycarpus (Hoffm.) Tuck.

Colorado, Coll. C. F. Baker, 1898, Utah, Coll. L. H. Pammel, 1901, and San Juan Island in Puget Sound, 1906, bark.

Thamnolia vermicularis (Sw.) Ach.

Top of Mt. Constitution in Puget Sound, at 2,000 feet, and near Laggan, Alberta, at 9,000 feet, 1906, soil and rocks.

Thelotrema lepadinum Ach.

Islands of Puget Sound, 1906, and Olympic Mountains, Washington, Coll. T. C. Frye, 1907, bark.

Urceolaria scruposa (Schreb.) Ach.

Islands of Puget Sound, 1906, rocks.

Usnea barbata Fr.

Islands of Puget Sound, 1906, trees.

Usnea cavernosa Tuck.

Islands of Puget Sound, 1906, trees.

Usnea florida (L.) Ach.

Gillespie County, Texas, Coll. G. Jermy, without date, Madison County, Missouri, Coll. Colton Russell, 1898, and Flathead Lake, Montana, Coll. M. J. Elrod, 1899, trees.

Verrucaria fuscella (Turn.) Ach.

Washington County, Missouri, Coll. Colton Russell, 1900, limestone.

Verrucaria margacea Ach.

Olga Island in Puget Sound, and near Glacier, British Columbia, 1906, rocks.

Verrucaria nigrescens Pers.

San Juan Island in Puget Sound, and near Glacier, British Columbia, 1906, rocks.

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